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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------------------------------------------------------------------------------------|-------------|----------------------|----------------------------|------------------|
| 10/042,487 | 01/09/2002 | Andreas Beutler | W-W Case 48 | 6101 |
| 7590 11/05/2003 Flynn, Thiel, Boutell & Tanis, P.C. 2026 Rambling Road Kalamazoo, MI 49008-1699 | | | EXAMINER LEO, LEONARD R | |
| | | | ART UNIT 3753 | PAPER NUMBER |

DATE MAILED: 11/05/2003

11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/042,487

Applicant(s)

BEUTLER ET AL.

Examiner

Leonard R. Leo

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-6,8-15 and 24 is/are pending in the application.
- 4a) Of the above claim(s) 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4,6,8-15 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

The amendment filed August 11, 2003 has been entered. Claims 1, 7 and 15-23 are cancelled, claims 2-6, 8-15 and 24 are pending, and claim 5 remains withdrawn.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "one of plain ends and plain center lands" in claim 13 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 4 is objected to because of the following informalities: the recitation of "axial direction" requires an article: a, an or the. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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The recitations of "up to 45%" and "up to 20%" are considered to be an open-ended numerical ranges, where the values include zero as a lower limit, and renders the claims indefinite. See MPEP § 2173.05(c).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2-4, 6, 8, 10-11, 14 and 24 rejected under 35 U.S.C. 102(b) as being anticipated by Fujikake. Regarding claim 8, the secondary grooves 101 have a height of about 43% of the height of fin 105 as permissibly gleaned from the drawings. Regarding claim 11, the gaps between fins 105 are read as "notches."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujikake in view of Beutler et al.

Fujikake discloses all the claimed limitations except plain ends.

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Beutler et al (Figure 2) discloses a heat transfer tube comprising integral fins 2 on an outside of the tube wall and plain ends 1a and plain center lands 1b for the purpose of ease of connection to tubesheets and baffle plates.

Since Fujikake and Beutler et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Beutler et al would have been recognized in the pertinent art of Fujikake.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Fujikake plain ends and plain center lands for the purpose of ease of connection to tubesheets and baffle plates as recognized by Beutler et al.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujikake in view of McLain.

The device of Fujikake lacks a longitudinal welded seam.

McLain discloses a heat transfer tube comprising integral fins 2 on an outside of the tube wall and a longitudinal welded seam for the purpose of ease of manufacture.

Since Fujikake and McLain are both from the same field of endeavor and/or analogous art, the purpose disclosed by McLain would have been recognized in the pertinent art of Fujikake.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Fujikake a longitudinal welded seam for the purpose of ease of manufacture as recognized by McLain.

Claims 2-4, 8-10, 15 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masukawa et al in view of McLain.

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Masukawa et al discloses all the claimed limitations except integral fins formed on the outside of the tube wall.

McLain discloses a heat transfer tube comprising integral fins 2 on an outside of the tube wall and integral fins 3 on the inside of the tube wall; wherein the integral fins are employed interchangeably (Figures 1B and 1C) for the purpose of achieving a desired heat exchange with the desired working fluids.

Since Masukawa et al and McLain are both from the same field of endeavor and/or analogous art, the purpose disclosed by McLain would have been recognized in the pertinent art of Masukawa et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Masukawa et al integral fins on the outside of the tube wall for the purpose of achieving a desired heat exchange with the desired working fluids as recognized by McLain.

Claims 11-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masukawa et al in view McLain as applied to claims 2-4, 8-10, 15 and 24 above, and further in view of Nishizawa et al.

The combined teachings of Masukawa et al and McLain lacks notched fins.

Nishizawa et al discloses a heat transfer tube comprising integral fins formed by grooves 11 on an outside of the tube wall and notches 12 in the fins for the purpose of improving bubble generation for improved heat exchange.

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Since Masukawa et al and Nishizawa et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Nishizawa et al would have been recognized in the pertinent art of Masukawa et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Masukawa et al notched fins for the purpose of improving bubble generation for improved heat exchange as recognized by Nishizawa et al.

Regarding claim 12, the fins of Nishizawa et al are T-shaped.

Regarding claim 14, the tube of Nishizawa et al is seamless.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masukawa et al in view McLain as applied to claims 2-4, 8-10, 15 and 24 above, and further in view of Beutler et al, as applied above.

Response to Arguments

The rejections in view of Kastner et al, Nosetani et al, Sakon et al, Nishizawa et al, Liu et al and Randlett et al are withdrawn.

No further comments are deemed necessary at this time.

Applicant is reminded of his duty to disclose under 37 CFR § 1.56, which states in part:

Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned.

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Beutler et al having at least one common inventor and commonly assigned clearly discloses the alleged novelty of claim 13.

Conclusion

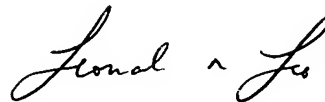
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry of a general nature, relating to the status of this application or clerical nature (i.e. missing or incomplete references, missing or incomplete Office actions or forms) should be directed to the Technology Center 3700 Customer Service whose telephone number is (703) 306-5648. Status of the application may also be obtained from the Internet: <http://pair.uspto.gov/cgi-bin/final/home.pl>

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Any inquiry concerning this Office action should be directed to Leonard R. Leo whose telephone number is (703) 308-2611.

A handwritten signature in cursive script, appearing to read "Leonard R. Leo".

LEONARD R. LEO
PRIMARY EXAMINER
ART UNIT 3753

November 2, 2003